Regional Operational Plan CF.4K.13.03

Operational Plan: Saltery Creek Salmon Weir

by

Jodi Estrada

October 2013

Alaska Department of Fish and Game **Divisions of Sport Fish and Commercial Fisheries**

Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the Système International d'Unités (SI), are used without definition in the following reports by the Divisions of Sport Fish and of Commercial Fisheries: Fishery Manuscripts, Fishery Data Series Reports, Fishery Management Reports, and Special Publications. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figure or figure captions.

Weights and measures (metric)

centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm

Weights and measures (English)

cubic feet per second	ft^3/s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd

Time and temperature

day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s

Physics and chemistry

all atomic symbols	
alternating current	AC
ampere	A
calorie	cal
direct current	DC
hertz	Hz
horsepower	hp
hydrogen ion activity (negative log of)	pH
parts per million	ppm
parts per thousand	ppt, ‰
volts	V
watts	W

General

Alaska Administrative Code	AAC
all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.
all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
corporate suffixes:	
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat. or long.
monetary symbols (U.S.)	$, ¢
months (tables and figures): first three letters	Jan,...,Dec
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S.C.	United States Code
U.S. state	use two-letter abbreviations (e.g., AK, WA)

Mathematics, statistics

all standard mathematical signs, symbols and abbreviations	
alternate hypothesis	H_A
base of natural logarithm	*e*
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2, etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	*E*
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	$\log_2$, etc.
minute (angular)	'
not significant	NS
null hypothesis	H_O
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	"
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

REGIONAL OPERATIONAL PLAN CF.4K.13-03

OPERATIONAL PLAN: SALTERY CREEK SALMON WEIR

by

Jodi Estrada

Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak

Alaska Department of Fish and Game
Division of Commercial Fisheries

October 2013

The Regional Operational Plan Series was established in 2012 to archive and provide public access to operational plans for fisheries projects of the Divisions of Commercial Fisheries and Sport Fish, as per joint-divisional Operational Planning Policy. Documents in this series are planning documents that may contain raw data, preliminary data analyses and results, and describe operational aspects of fisheries projects that may not actually be implemented. All documents in this series are subject to a technical review process and receive varying degrees of regional, divisional, and biometric approval, but do not generally receive editorial review. Results from the implementation of the operational plan described in this series may be subsequently finalized and published in a different department reporting series or in the formal literature. Please contact the author if you have any questions regarding the information provided in this plan. Regional Operational Plans are available on the Internet at: http://www.adfg.alaska.gov/sf/publications/

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SIGNATURE PAGE

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Plan Type:	Category I

Approval

Title	Name	Signature	Date
Project leader	Jodi Estrada	Jodi E	09/27/13
Research Coordinator	Nick Sagalkin	Nick Sagalkin	9/27/13

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ABSTRACT

The Saltery Creek sockeye salmon *Oncorhynchus nerka* run is the largest on the northeast side of Kodiak Island and is a popular sport fishing location for locals, guides, and lodge customers due to its proximity to the city of Kodiak and the relative ease of accessibility by Saltery road. Saltery Creek is fed by Saltery Lake and leads to Saltery Cove within Ugak Bay, where commercial and subsistence fishermen harvest sockeye and pink salmon (*O. gorbuscha*). An adult salmon weir located on Saltery Creek provides timely and reliable escapement information for commercial inseason fishery management by the Alaska Department of Fish and Game (ADF&G). The Saltery Creek weir was operated by ADF&G from 1993 to 2003 and has been an ADF&G / Kodiak Regional Aquaculture Association (KRAA) cooperative project since 2008. No weir was operated from 2004 to 2007. ADF&G provides project oversight, training, and logistical support; KRAA provides project funding and a crew member. Saltery Creek weir is located about one quarter mile below the outlet of Saltery Lake and is operated from approximately June 15th to August 15th. The primary duties of the Saltery field crew are to enumerate and identify fishes passing through the weir and to collect age, sex, and length information from a subset of adult sockeye salmon. This operational plan provides seasonal employees with a reference document for operating the field camp effectively by describing how to install and operate the weir, what is expected of the crew, and how to live safely at the remote site.

Key words: Saltery Lake, Saltery Creek, sockeye salmon, *Oncorhynchus nerka*, weir, escapement, Kodiak Management Area, KMA, field camp operational plan

PURPOSE

The primary function of maintaining a weir at Saltery Creek is to enumerate sockeye salmon *Oncorhynchus nerka* returning to Saltery Lake for Alaska Department of Fish and Game (ADF&G) management of the Ugak Bay commercial fishery. All fish passing up or down through the weir are identified, enumerated, and reported to the ADF&G office in Kodiak on a daily basis. Enumeration at the weir serves a secondary purpose by providing run timing and escapement information for KRAA, which uses Saltery sockeye as a broodstock for the Spiridon smolt project (KRPT 2011). Project activities at Saltery Creek weir will include installation, operation, and maintenance of the weir, salmonid enumeration, and the collection of age, sex, and length (ASL) samples and data.

OBJECTIVES

- Install and operate a fixed-picket salmon enumeration weir on Saltery Creek.
- Enumerate salmon escapement through the weir into Saltery Lake on a daily basis and report counts to ADF&G Kodiak management team on morning radio.
- Collect at random at least 600 age, sex, and length samples from the sockeye salmon escapement.
- Estimate salmon buildup in the river from downstream of the weir to Saltery Cove.
- Monitor the commercial fishery at Saltery Cove.
- Create rapport with the public, lodge owners, and guides by answering questions and explaining sport fishing regulations.

METHODS

The crew will be collect and record weather information on the daily weather observations form (Figure 1) each morning prior to radio call and will report these data to ADF&G Kodiak as requested. Fish passing up or down through the weir (Figure 3) will be visually identified and enumerated by crew members using handheld counters and recorded daily (Figure 2); see "Operating the Weir" for further details. Daily count data will be reported to ADF&G

management during the morning radio call on the following day. Crew members should minimize delaying salmon passage through the weir. A minimum of 600 adult sockeye salmon will be trapped and sampled for ASL data throughout each season following methods as described by the International North Pacific Fish Commission (1963) and Moore (2013). Sex will be determined by observation of external morphological features and length will be determined by measuring the distance from mid-eye to tail fork using metric ruler, to the nearest millimeter. Technicians will be trained while in the field on how to properly speciate salmonids and will collect ASL data per the adult sampling protocol (Moore 2013). Field camp procedures are explained in detail throughout the remainder of the document.

PRIOR TO DEPARTURE

Prior to leaving for the field, all crew members are required to have current CPR/First Aid Certification and to read a series of State Operational Plans:

1. Safety Policy Standards
2. Building Safety
3. Field Camp Safety
4. Aircraft Passenger Safety
5. Emergency Survival Equipment Required in Aircraft
6. Vehicle Safety
7. Small Tool Handling
8. Firearm and Bear Safety (written SOP and video)
9. Boating Safety (written SOP and video)

Power tool batteries and 12 volt "car" batteries should be tested and fully charged before departing for the field and the generator should be tested to ensure it works. The ATV and ATV-trailer should also be checked for fluid levels and mechanical soundness.

Enough blank data sheets to last the season will be gathered and put in the office box for field use; these include the weekly weir camp reporting form, daily weather observation form, and timesheets. Other forms to bring are the current Emergency Response Flow Chart, the current adult sampling protocol (Moore), grocery lists, instructions for using the Iridium phone and emergency phone numbers, a copy of this operational plan, satellite phone usage forms, and copies of the current ADF&G sport fishing regulations. Crew should be sure to bring a few Rite in the Rain books and office supplies as well.

OPENING CAMP

There are several tasks that must be addressed during the first day at camp: unlocking the shed, setting up the weatherport tent (see Appendix B), storing supplies and personal gear, setting up the single side band (SSB) radio (see Appendix A), testing the satellite phone(s) for a signal, and installing propane appliances.

INSTALLING THE WEIR

Weir installation generally occurs on the second day at camp.

1. Move tripods from their staged location on the far (west) bank into the river and evenly space them across the river. The back legs of each tripod will lean against the next tripod. Place a

few sandbags (2 to 4 depending on stream height) on each tripod platform to weigh them down.

2. Place the two outer tripods (nearest the stream banks) slightly upstream from the rest of the tripods and string a taught line (use seine twine) across the river. Move the remaining tripods upstream until they touch the line. Square the tripods perpendicular to the upstream river flow.
3. Fine tune tripod spacing and leveling. Level each tripod by digging under the highest rear leg to level it out. Level tripods make it easier to install and level the boardwalk. Place as many sandbags and boulders as will fit on each tripod platform (~10).
4. Install the boardwalk on the posterior portion of the tripod arms; do not secure boards to the tripods and each other until the boardwalk is leveled. Starting at one end of the weir, place a boardwalk board across the first set of tripod arms ensuring it rests on the next consecutive tripod arm. Continue laying out the boardwalk the length of the weir.
5. Level the boardwalk with spacers or leveling blocks nailed to the tripod arm and fine tune the straightness of the boardwalk. Screw the boardwalk boards to the tripod arms and each other. Make sure the end of each individual board rests on a tripod arm.
6. Lay upper (aluminum) and lower (steel) stringers in an alternating pattern across all tripods. At both stream banks, use a sledgehammer to drive the upper and lower stringers partially into the stream bank for stability.
7. Begin installing weir panels from the near (east) bank. Lay each panel flat against the stringers with the base of the panel up off the riverbed approximately 10 inches. Rake and dig a channel in the river bottom to set the panel into. Once a channel is dug, set the panel against the stringers and into the channel and make sure it is straight and level. Next, backfill the channel with stream gravel and rock to ensure it is fish tight. The first (and last) panel may require minute bank modifications and sandbags to fill gaps. Continue setting weir panels for the entire length of the weir. Sand bags may need to be placed at the base of the panels to maintain a "fish tight" weir.
8. Install three counting gate frames along with the weir panels. Two of the gates are for counting and one is for the trap. The first counting gate should be located between the second and third tripods, approximately 15 feet from the near (east) bank. The second counting gate should be located between the fourth and fifth tripods, approximately 40 feet from the near (east) bank. The trap gate should be located between the second and third tripods, approximately 15 feet, from the far (west) bank. Ultimately, gates should be placed where water flow is greater and depth is adequate for fish passage.
9. Tie weir panels to each other and to the upper and lower stringers with seine twine or cable ties.
10. Place flash panels in front of and against each counting gate (gates one and two) on the river bottom and weigh down with large rocks or sandbags.
11. Install "keep off weir" sign, stream gauge, and counting seats.
12. Run a length of cable from a tree on the near bank through the four nearest tripods and affix both looped ends with crimps. Do the same for the far bank and remaining tripods. This ensures that tripods will not flow down river during a weir wash out.

13. Inspect the weir. Walk along the front of the weir backfilling the base of panels where necessary to ensure the weir is fish tight (use the aquascope).
14. Install the "Scott" trap upstream at the far bank gate (Figure 4). Use two 10-foot panels and two 4-foot panels (entrance deflectors), to form a "W" coming out from the weir panels on either side of the gate frame. Use two 6-foot panels (must be the ones with the smaller pipes) to make the upstream end of the trap; place the 6-foot panels at a 45° angle and interlock them (dove tail) with each other and the 10-foot panels. Use seine twine or zip-ties to affix all panels together. Use the pre-cut triangle panels to shore the trap to the sides of the gate frame, affix them to the weir and the trap. Place loose panels on the lead edges of the trap so that fish cannot jump out the front of the trap, and one panel across the very rear of the trap on the deflectors so fish cannot jump out the back. Backfill gravel at the bottom of all panels and surround the outside, underwater side of the trap with sandbags to ensure the trap is fish tight.

OPERATING THE WEIR

1. Monitor the weir throughout the day. Crew members will have better success passing fish if they allow a build-up of about 100 fish or more behind the weir. The crew leader will organize a schedule.
2. If a crew member does not have experience identifying fish, the project leader or designee will train the crew to visually recognize the different salmon species and their swimming patterns. When fish have accumulated behind the weir take time to visually study them and note differences as they pass through the weir.
3. Begin counting fish by opening a gate and enumerating them as they pass through with handheld tally counters; one for each species as well as on each for net-marks and "jacks." Fish passing back down through the weir will be subtracted from the count (except steelhead). Regulate the gate opening by using a wedge to lock the gate into position. If the gate is opened too far when first opened, fish will pass through quickly and in large numbers which will accurately count and identify them. Monitor escapement quality, including the numbers of net-marked and "jack" (salmon < 400 mm mideye to tail fork) sockeye salmon.
4. If a counting gate will not open, it is probably locked up by gravel or a rock wedged into the framework. Do not attempt to force the gate or the entire framework may pull out of place along with the flash panel, free up the gate by inspecting for wedged rock or gravel.
5. When counting fish and conducting surveys, wear polarized glasses for greater visual recognition and eye protection from the sun's reflection off of the water.
6. Periodically check tally counters to ensure they are working properly.
7. When finished counting make sure the counting gate is closed completely.

MAINTAINING THE WEIR

1. The weir must be cleaned and inspected daily. Debris build up on the weir may cause poor water flow, leading to scouring at the base of weir panels and weir washout during periods of high water.
2. Remove sticks, logs, leaves, grass, gravel, fish carcasses, and garbage from the weir.

3. Throw all debris (except garbage) over the weir, allowing it to flow down river.
4. Inspect the weir to ensure it is fish tight; look for scouring, panels out of place, gaps between panels (greater than a fingers width), sandbags that have been pushed off of tripods by bears, and make sure flash panels are in place and secure. Make repairs if needed.
5. Make sure the framework of the weir is sound and secure. If any of the boardwalk boards are loose or any section or parts of the weir broken or unsafe, repair it immediately.
6. If the water level increases to the point where the bottom of the sandbags on the tripod platform are in the water, weir panels and the trap will need to be pulled to avoid a weir wash out. If a weir wash out is possible, closely monitor fish build-up below the weir for fish pass estimation. If pulling the weir is needed, pull the trap and the three gates (keeping the weir clean also lowers the water level). If the visibility allows, count fish passing through the gates. If the water level continues to rise, pull panels from the center of the weir or where the current is the greatest.
7. Keep bears away and off of the weir as much as possible to minimize damage. Try to maintain a perimeter around the weir that is a No Bear Zone. Only haze bears if crew is comfortable doing so and it is not a dangerous situation.

STREAM AND BAY SURVEYS

The crew will conduct stream surveys every three to four days by walking the creek from downstream of the weir to saltwater and estimating the species and number of salmon in the creek. These numbers will be noted on the weekly weir camp reporting form (Figure 2) and reported to the ADF&G management staff during the next radio schedule. If the creek is too high to safely conduct a creek survey, crew will drive down the road and check the "big holes" along the river and estimate the number and species of salmon there.

CLOSING CAMP

All camp items will be stored in the on-site shed for winter storage. Air dry the foam bed pads and weatherport canvases if possible before placing them in the shed.

DO NOT leave any food, batteries, power tools, the generator, the ATV or ATV trailer on site.

Remove the door knob on the shed and place it inside the shed for use the following season. Place sheets of plywood over the door and windows and screw them on.

ADDITIONAL GUIDELINES AND PROCEDURES

CAMP POLICIES

- Alcoholic beverages are not to be stored or consumed in areas open to public view. If alcohol is consumed at a camp the employee must be 21 years of age or older and off work without any duty scheduled for the remainder of the day. Under no circumstances shall he or she engage in the operation of any State equipment, nor shall he or she return to duty status under the influence of alcohol. The abuse of alcoholic beverages will be grounds for immediate dismissal.
- All employees will be required to act in a professional manner at all times and be especially courteous to the public.

- Injuries must be reported to the project supervisor within 24 hours.
- Loss or damage of equipment must be reported to the project supervisor within 24 hours.

ORDERING FOOD AND SUPPLIES

Camp re-supply will be provided near the 1st and 15th of each month and may be by plane or ATV. Completed timesheets, scale gum cards, and electronic data should be put on these flights and addressed to the project lead.

Alcoholic beverages, personal grooming supplies, newspapers, magazines, and tobacco must be purchased with personal funds. Please purchase as many of these personal items as possible prior to leaving for the field and be sure to set up a slush fund for incidentals before departure.

VISITORS/PUBLIC INTERACTION

The weir site will get many visitors. Visitors come by the camp to watch fish passing through the weir and ask about fish passage. Keep the camp clean and be courteous and helpful to visitors, but also inform them of the boundaries. The general public is not allowed to access the weir. Make sure the "keep off weir" sign is posted in a visible location. Under no circumstance should any employee accept gratuities or payment.

FIREARMS

All field camp employees must be able to safely use firearms. A firearm will be provided for bear protection. Training on safe handling and shooting of firearms will be conducted for all personnel. Loaded guns (with a round in the chamber of the gun) are prohibited inside camp facilities. **Anyone handling a firearm should always treat it as if it is loaded.** Clean guns frequently. Make certain that firearms are completely unloaded while doing so. Firearms will be stored on site, unloaded, in a location out of sight from the public. Any misuse of firearms will not be tolerated and may be cause for immediate dismissal. Always unload a firearm of all ammunition before boarding a vehicle, vessel, or aircraft.

GARBAGE

Completely burn garbage to prevent attracting bears. Do not burn during windy or dry weather conditions. Never start fires with fuel. To prevent grass fires keep grass and brush trimmed to at least 15 inches away from the burn pit. It is best to burn trash early in the morning or late in the evening when the wind is minimal and humidity is high. Never leave a fire unattended.

Tin cans should be burned with burnable garbage to eliminate residual food and odors that attract bears. Send in burnt cans and non-burnable items on supply flights. All garbage that is sent to town must be double bagged. Empty fuel containers should also be sent in as soon as possible on return grocery flights for immediate reuse.

Biodegradable garbage should be placed into a slop bucket (food scraps, etc.) and dumped away from camp in the river downstream of the weir. Don't compost biodegradable food because it attracts bears.

DRINKING WATER

Stream and lake water may be contaminated with bacteria or harmful parasites. A "Micron" water filter is provided in the camp to filter all drinking water. If filter cartridges are damaged,

replace them immediately. If filters are not available, boil drinking water for at least 10 minutes. Be sure to read the instruction manual with each filter for cleaning and care information.

ALL-TERRAIN VEHICLES

Saltery weir camp is furnished with an All-Terrain Vehicle. The ATV has been provided to transport materials, supplies, and equipment between the camp and supply planes or vehicles. It may be used for transportation to and from sites of assigned field duties, such as surveys. It is not intended for personal use or recreational purposes. The ATV may be accessed and operated only by trained personnel and will be secured when not in use. Be safety conscious at all times; do not speed or drive recklessly and always wear an ATV helmet.

Unauthorized use of the ATV will result in a notation on the crew member's performance evaluation and/or dismissal from employment.

MAINTENANCE

Facility maintenance is an important aspect of camp life; the tent and weir must be kept structurally sound and safe. Refer to last year's end of season crew leader report for a list of needed projects and repairs. Provide a list of materials needed to accomplish the projects and repairs to the project leader. Repairs and maintenance should be scheduled on days when fish passage is slow to keep this work within normal work periods.

The generator and ATV must be kept in good operating condition and require regular maintenance. At the end of each season, equipment should be winterized by leaving the gas tank full (and/or adding a gas stabilizer) and tagged with a description of the equipment's condition on the tag.

Keep the grass on the far (west) side of the weir short so that bears can be seen sooner.

COMPLIANCE WITH ADF&G REGULATIONS

All employees are responsible for complying with local subsistence, sport fishing, and hunting regulations. Copies of State and Federal regulations will be available to all field camp personnel and kept in camp. Any violation will be recorded on the crew member's performance evaluation and may be cause for immediate dismissal.

VIOLATIONS

If a violation is observed try to record the incident by photo or video and write down any pertinent details. Do not approach the person if it seems unsafe to do so. Inform the project leader and the management team by radio either at next schedule or ASAP, depending on the level of the violation.

The use of the five Ws can aid in obtaining sufficient information pertaining to a violation.

1. What is the violation?
2. When did the violation take place?
3. Where did the violation occur?
4. Who is in violation and who are the witnesses?
5. Why was the violation committed?

FIRST AID AND FIRE SAFETY

All crew members not already certified will take a mandatory CPR and First Aid training course prior to going in the field. The crew leader will ensure that a fully stocked first aid kit and fully charged, operable fire extinguishers are in camp and that all personnel know where they are located and how to use them. Make sure smoke and carbon monoxide alarms are installed and operational.

EMERGENCIES

Working in the field carries many hazards with it and crew members should always be aware of their surroundings and avoid dangerous situations; immediate medical help is rarely a possibility in remote locations and inclement weather can delay extraction. Crew members will ideally avoid recreating alone, but at a minimum will give their crewmate the location they will be recreating as well as the time they will be back. If a crewmate does not return when they said they would, the project leader should be contacted immediately and the Emergency Response Flow Chart should be utilized.

In the event of a medical emergency, administer first aid to stabilize the situation. If an injury is life threatening, immediately notify the US Coast Guard at **800-478-5555** on the Iridium satellite phone. The US Coast Guard can also be reached on SSB radio frequency 4.125 MHz or on VHF channel 16.

When contacting the U.S. Coast Guard, have the following information ready to pass along:

1. Location of Saltery Creek weir field camp or specific location of the emergency (57°29'26.34 N, 152°35'11.70 W),
- Name and phone number of supervisor,
- General nature of medical emergency,
- Number of patients
- Specific information regarding the patient (name, age, primary complaint, and vital signs),
- Any on-site assessment and treatment,
- Wind and weather conditions, and
- Other information pertinent to a possible medical evacuation.

SCHEDULE AND DELIVERABLES

The annual schedule of activities for the 2014 – 2016 salmon fishing seasons are as follows:

Date:	Activity
June 15-June 22	Approximate time frame for opening field camp and for weir installation.
June 15 – August 15	Weir operating. Daily escapement data are reported to ADF&G Kodiak and are posted online and available at the office.
Daily	Fish are passed through the weir as needed during daylight hours; weir is maintained to be fish tight.
Every 3 to 4 days	Stream surveys are conducted and findings are reported to ADF&G management.
Weekly	At least 40 ASL samples per week are collected by the crew, with 80 samples being collected during peak migration.
Every two weeks	Scale samples and accompanying data are sent in to ADF&G Kodiak on resupply flights.
Post season	Crew leader authors a 1 to 2 page end of season report summarizing happenings, escapement data, and jack percentages. Crew leader makes a field inventory and town inventory for future use. Scale data are analyzed and escapement information are entered into ADF&G Kodiak management reports.

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RESPONSIBILITIES

Fisheries Biologist I:	Supervises project, coordinates logistics, trains crew, assists in field as necessary.
Fish and Wildlife Technician III:	On-site crew leader performs duties as assigned by the FB I: Records daily weather observations, is contacted for morning radio call (via SSB at 8:10 am by the ADF&G Kodiak office), makes daily journal entries in camp log, tallies fish numbers, and fills out daily data sheets.
Fish and Wildlife Technician II:	Field crew member; assists in data collection, duties assigned by crew leader, and camp chores.

SPECIAL PROJECTS

The Saltery weir crew is encouraged but not required to collect bison fecal samples for surveillance purposes as a favor to the Office of the State Veterinarian (OSV). This is a simple one-time per season event that is coordinated with Jay Fuller, DVM (jay.fuller@alaska.gov 907-375-8213) or Bob Gerlach, DVM (bob.gerlach@alaska.gov 907-375-8215). This should be organized early in the season as the OSV sends out sampling materials and a protocol from Anchorage.

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FIGURES

Saltery Daily Observation										
Date	Time	Air Temp	Water Temp	% Cloud Cover	Ceiling	Visibility	Wind Direction	Wind Velocity	Stream (cm)	Comments

Figure 1.–Daily weather observation form.

Location: Personnel: Weekly Report no. For Week Ending Saturday:

Date		Daily Total Salmon Escapement						Daily Totals	Steelhead		Jack No.	Jack % Sockeye	Net Mark Sockeye	Reds Sampled	Dollys up
		Sockeye	L. Sockeye	Chinook	Pink	Coho	Chum		Down	Up					
Sun.	D														
	C														
Mon	D														
	C														
Tue	D														
	C														
Wed	D														
	C														
Thu	D														
	C														
Fri	D														
	C														
Sat	D														
	C														
Total	W														
	Y														

Additional Comments: Bear and people problems, smolt migration, weir problems, estimated escapements, cabin repair, etc.

D=daily C=cumulative W=weekly Y=season

Figure 2.–Weir weekly camp reporting form.

Figure 3.–Saltery weir.

Figure 4.–“Scott” trap.

APPENDIX A. INSTALLING AND USING THE SINGLE SIDE BAND RADIO

The single side band (SSB) radio is used to communicate with ADF&G management for morning radio and may also be used for emergency calls and inter-camp communication during off-peak hours.

Installing the antennae:

- Place the SSB main unit where it will be located in the weatherport for the season and attach the black coax to the back of the unit. Run the cable out the back of the weatherport and attach the other end of the coax to the noise cancelling module (NCM).
- Tie the NCM up a tree with seine twine.
- The crew should locate two trees facing northeast. There are two marked with loops of yellow poly rope close to the road that have been used in previous years.
- String the copper antennae as far as they will go, one in each marked-tree direction, so that the antennae form a large "V" coming from the weatherport. Tie seine twine on to the plastic end on each antenna and string them to their marked-trees. Tie the twine around the tree about 10' up and make sure twigs and branches are not touching the antennae at any point.

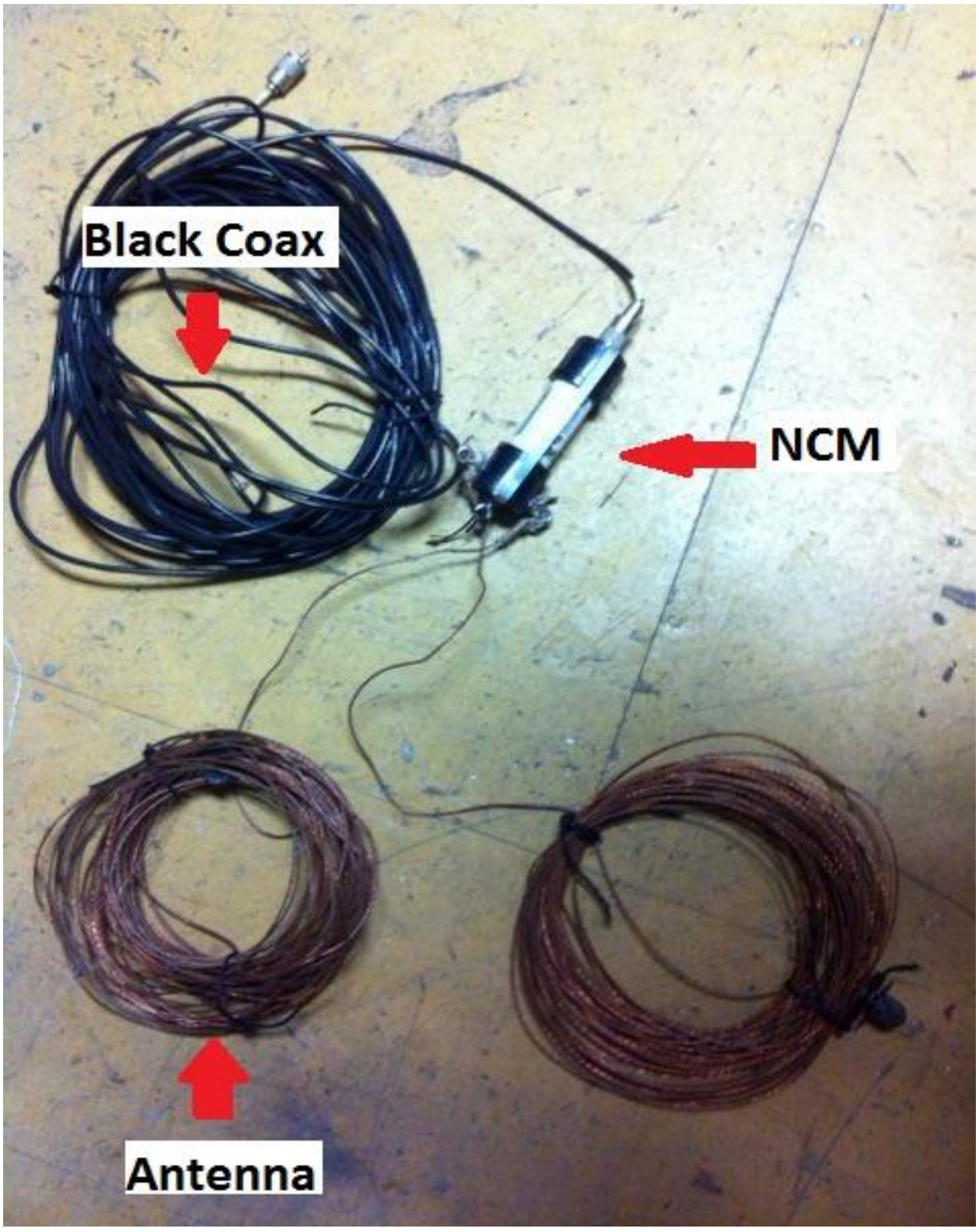
Connect the main unit:

- The main unit has to be connected to a 12V battery via adapter.
- Run a ground wire (bailing wire or copper wire) from the butterfly nut on the back of the main unit. to a ground (rebar) outside the weatherport.

Using the unit:

- Morning radio will be conducted on frequency 3.230 mHz at 8:10 am every morning.
- Turn on the unit about 10 minutes before schedule so that it can warm up.

-continued-



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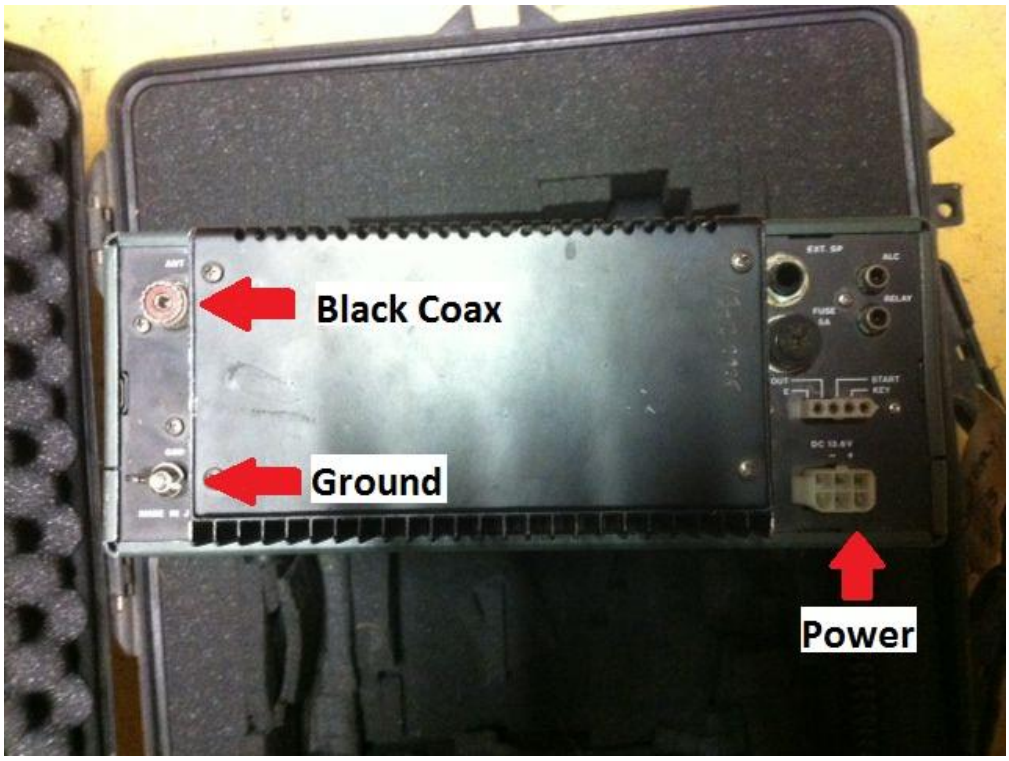
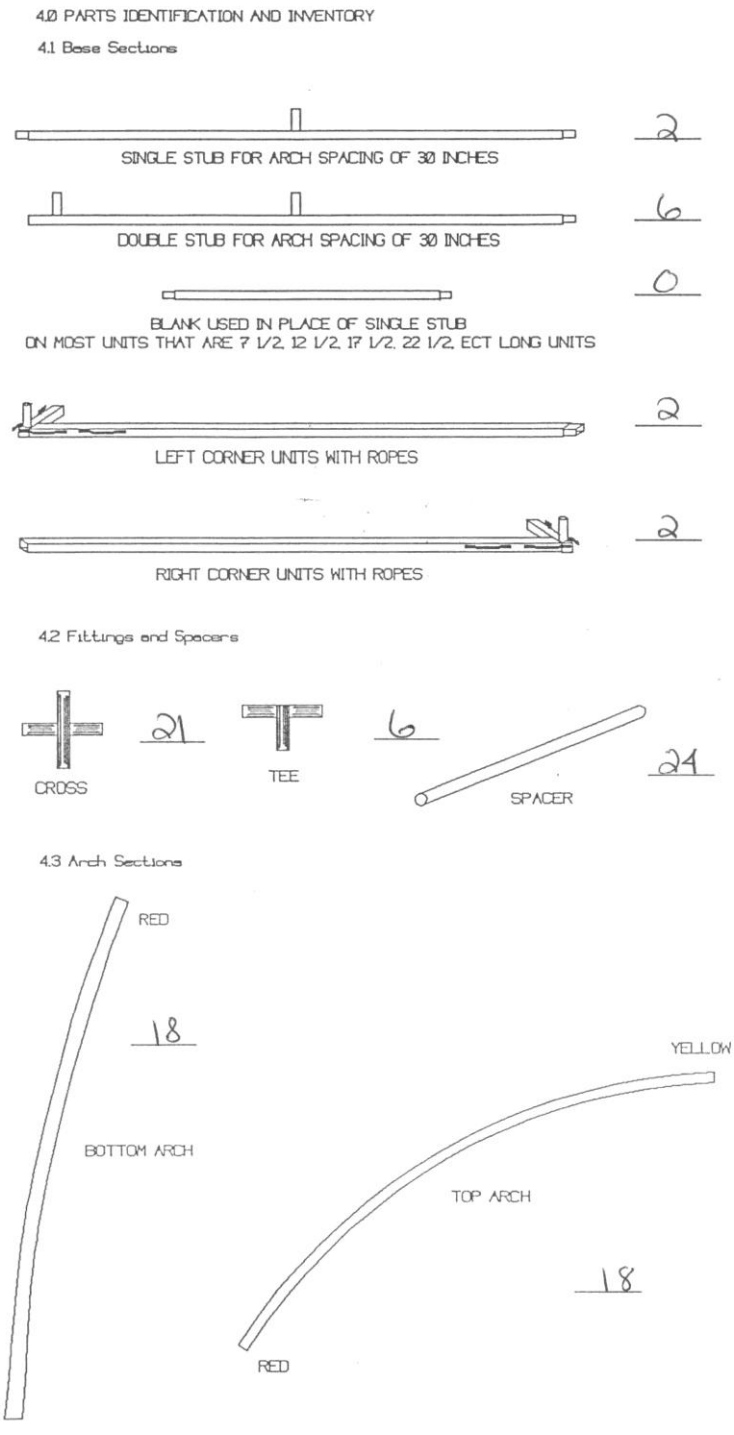

Black Coax
Ground
Power

APPENDIX B. ASSEMBLING THE WEATHERPORT

Appendix B1.–Assembling the weatherport.



-continued-

5.0 MAIN ASSEMBLY-ERECTION INSTRUCTIONS

5.1 SITE/FOUNDATION PREPARATION

1. Ground Installation:
   a. pick a site that is relatively level.
   b. clear trees, logs, bushes, rocks, boulders, etc from the site.
   c. fill in holes or trenches around the perimeter of the site where the base will be setting.
   d. check to insure that the ground has holding power for the spikes and earth anchors.
   e. check to insure that bed-rock or some other hard surface is not under the top soil that would prevent the spikes from being driven fully into the ground.

2. Asphalt Installation:
   a. pick a site that is free from curbs or other sharp drop offs.
   b. fill in holes in the asphalt which may interfere with the setting of the base around the perimeter of the shelter.
   c. check to insure that bed-rock or some other hard surface is not under the asphalt that would prevent the spikes from being driven fully into the ground.

3. Concrete Installation:
   a. pick a site that is free from curbs or other sharp drop offs.
   b. fill in holes in the concrete which may interfere with the setting of the base around the perimeter of the shelter.

4. Wood Installation:
   a. the WEATHER-PORT base frame anchors to the wood foundation or floor by the use of lag bolts.
   b. insure that your wood base or floor is anchored absolutely secure to the ground.

NOTE: THE USER IS RESPONSIBLE FOR ANCHORING THE BASE TO RESIST ALL LOADS EXPECTED TO BE ENCOUNTERED EVEN IF THIS REQUIRES THE USE OF ADDITIONAL ANCHORS OR ANCHORING TECHNIQUES NOT SUPPLIED WITH THIS SHELTER.

4

-continued-

5.2 BASE/ASSEMBLY/INSTALLATION

5.2.1 Laying Out and Assembling the Base

1. Locate and identify each base piece by using the PARTS IDENTIFICATION section of this manual.

2. Figure 5.2-1 is an assembly drawing for a 12' wide by 20' long shelter. Your unit may have fewer or more double stubs going down each side, however, your unit will have four corners and two single stubs unless otherwise indicated. Study the figure paying attention to the placement of the components.

IMPORTANT
The hooks on the sides of the base sections must be facing towards the outside of the unit at all times.

3. Lay out the base as shown using the indicated number of double stubs on each side of the unit. Slip fit each base section together.

NOTE
Do not anchor the base at this time

4. When the complete base is slip-fitted together, BUT NOT ANCHORED, proceed with squaring, measuring the diagonals, and aligning the base so that all sides are straight.

5. Be sure the base frame is square by measuring diagonally from corner to corner as shown in Figure 5.2-1. When this measurement is obtained then anchor the right corner base section. Refer to section 5.2 for anchoring instructions.

6. Repeat step 5 for the left corner. Be sure the base did not move by checking the diagonal measurements.

7. Temporarily anchor the other two end sections so the base will remain square as you work down the side of the unit.

8. Anchor each base section in sequence as you work around the perimeter of the unit.

NOTE:
Be sure the base is in line going down the length before you anchor it. You can use the steel tape as a guide by stretching it from corner to corner.

5

-continued-

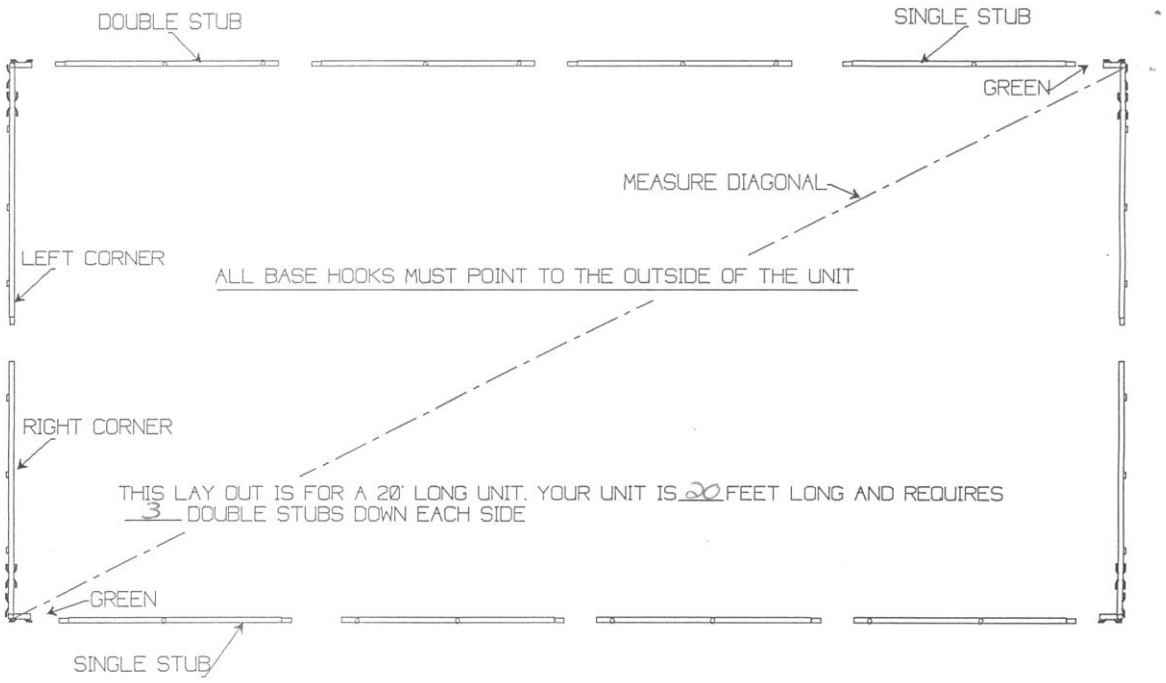


FIGURE 5.2-1 BASE LAY OUT

12INST3A

-continued-

HP UNITS

SAFETY
WEAR HEAD PROTECTION FOR THIS SECTION

5.4 ARCH ASSEMBLY

Each arch is made up of 4 sections (see parts page for specific arch pieces). The arches are color coded with yellow and red. The bottom arch section is color coded red at one end and the other end is not color coded. If your unit has mid arches, they will be color coded yellow on one end and red on the other end. The top arches are color coded yellow on both ends.

The silver end of the bottom arch must be installed into the base frame. The red end of the mid arch must be installed to the red end of the bottom arch. Next, the top arch must be installed into the yellow coded side of the mid arch.

1. Install one bottom arch section onto the first corner base stub, with the red end pointing up. Figure 5.4-1.

2. Insert a Tee fitting in the red end. Be sure the short stub on the fitting is on the inside of the unit and pointing down the length of the unit. Figure 5.4-2.

3. Install one mid arch to the bottom arch, matching them up, red to red.

4. Insert a Tee fitting in the yellow end of the mid arch.

5. Install the top arch with one yellow end matching up with the yellow end on the mid arch.

6. Insert another Tee fitting in the open end of the top arch.

7. Next, install another mid arch with the yellow ends together.

8. Insert a Tee fitting into the red end of the mid arch.

9. Install the red end of the bottom arch into the mid arch.

6. Spring the bottom arch into the base frame.

7. Install the remaining arches in a like manner. Keep in mind that all of the arches except the two end arches use Cross fittings instead of Tee fittings. Only the two end arches use Tee fittings. Be sure the exposed stub on all fittings is on the inside of the arch--NOT THE OUTSIDE. Figure 5.4-1.

SEE ARCH PROFILE PAGE FOR CLARIFICATION

-continued-

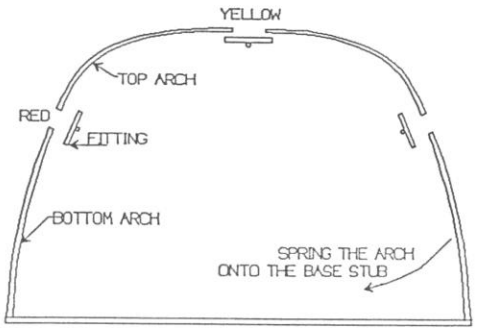


FIGURE 5.4-1

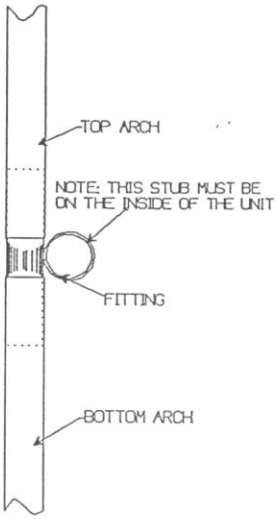
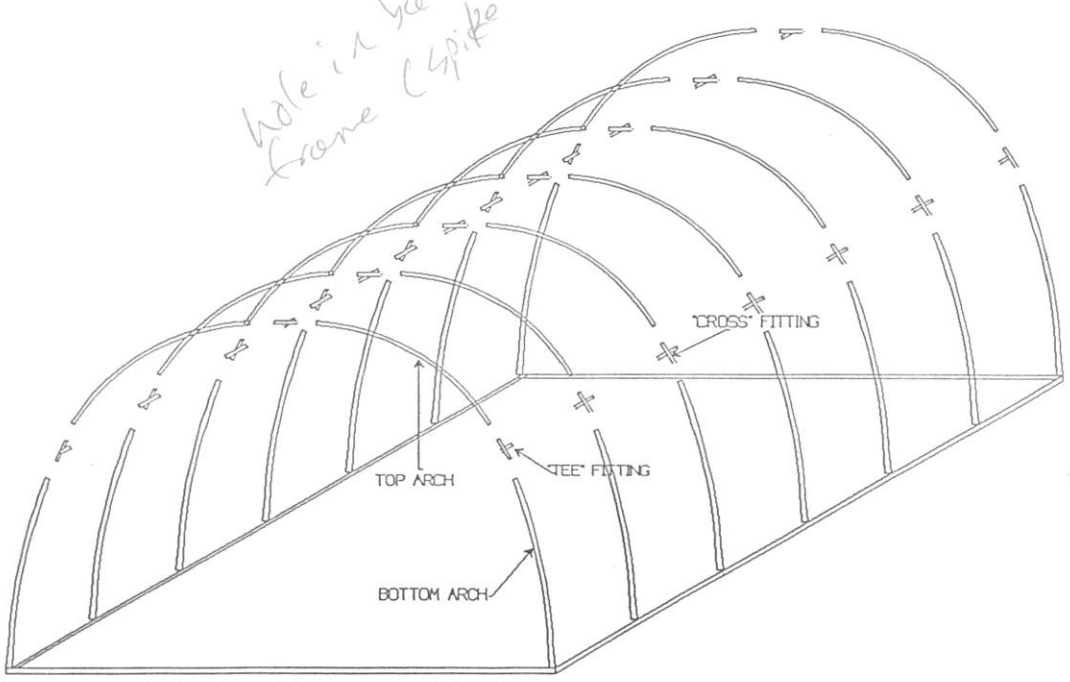


FIGURE 5.4-2



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SAFETY
WEAR HEAD PROTECTION FOR THIS SECTION

5.5 SPACER INSTALLATION

Install three rows of spacers down the length of the unit as shown in Figure 5.5-1. The spacers slip fit over the fittings and you may need to line up each fitting to obtain the proper fit. The spacers go on the inside of the unit NOT THE OUTSIDE. Figure 5.5-2. If you need to line up a fitting then use another spacer for this purpose.

5.6 FOAM TAPE INSTALLATION

Apply a layer of gray foam tape to the very outside edge of each arch. This tape provides protection for the viny cover. Figure 5.6-1.

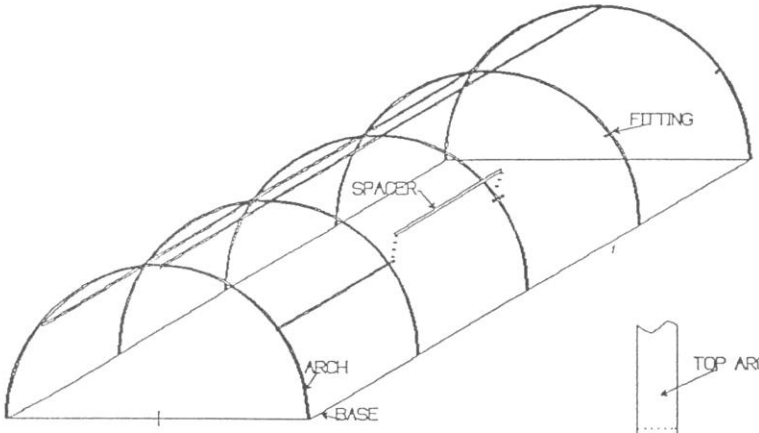
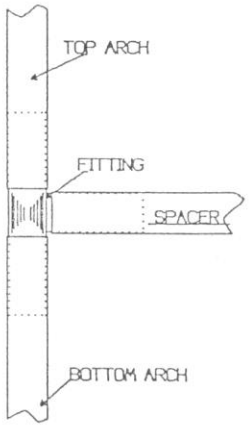


FIGURE 5.5-1 SPACER



FIFGURE 5.5-2

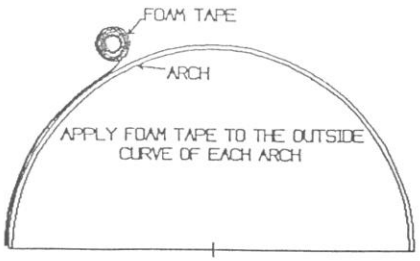


FIGURE 5.6-1

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5.8 END PANEL INSTALLATION

Refer to Figure 5.8-1 for the next 5 steps.

1. Unfold the end panel at the desired end of the WEATHER-PORT. Be sure the inside of the panel is facing up. Figure 5.8-1.

2. Tie off the base rope to the cleat nearest the outside edge of the unit.

3. Pull the opposite end of the base rope tight and tie it off to the cleat nearest the outside edge of the unit.

4. Line up the base cut outs in the end panel with the base hooks located on the base frame.

5. Remove the spacers from the Tee fittings.

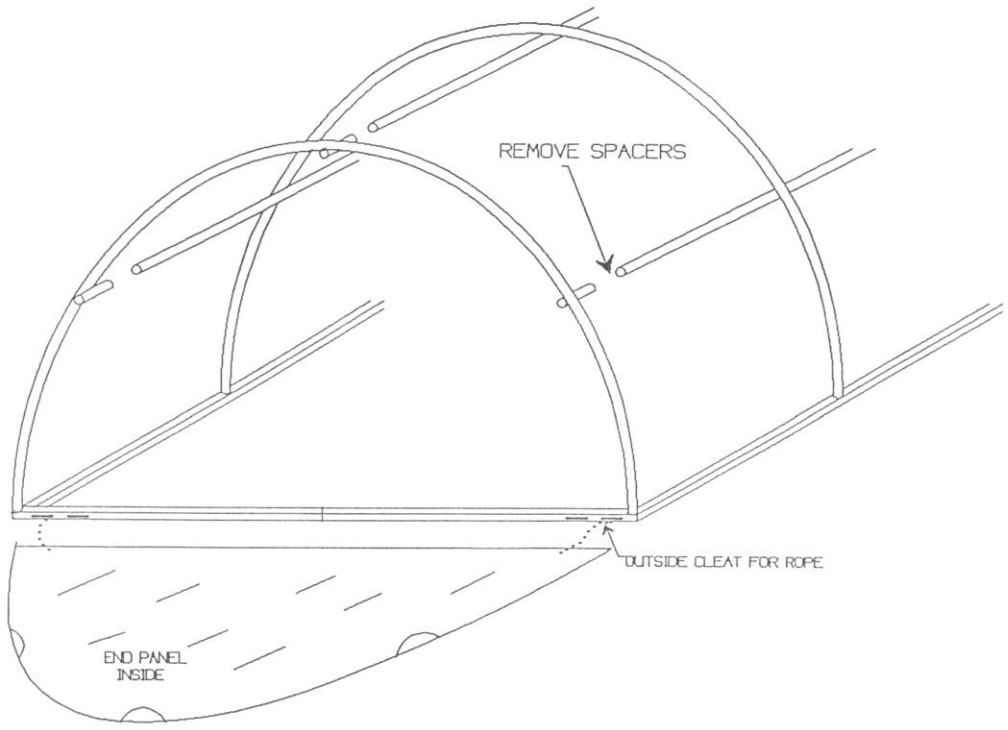

FIGURE 5.8-1

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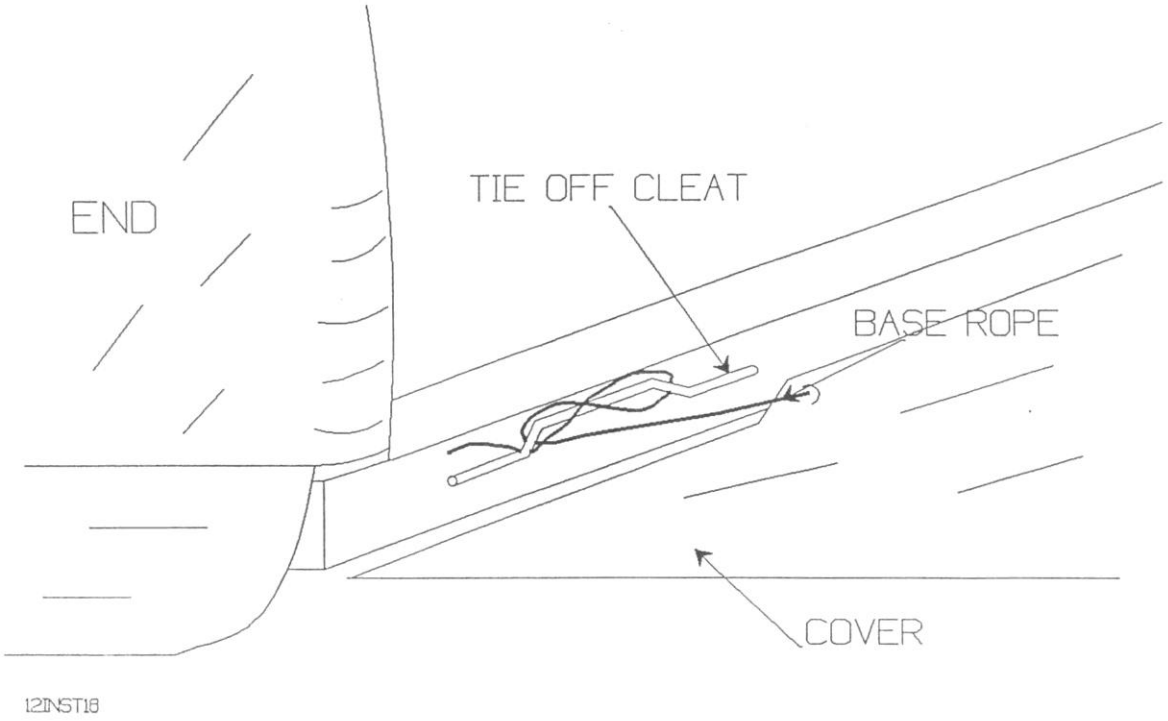

FIGURE 5.10-2

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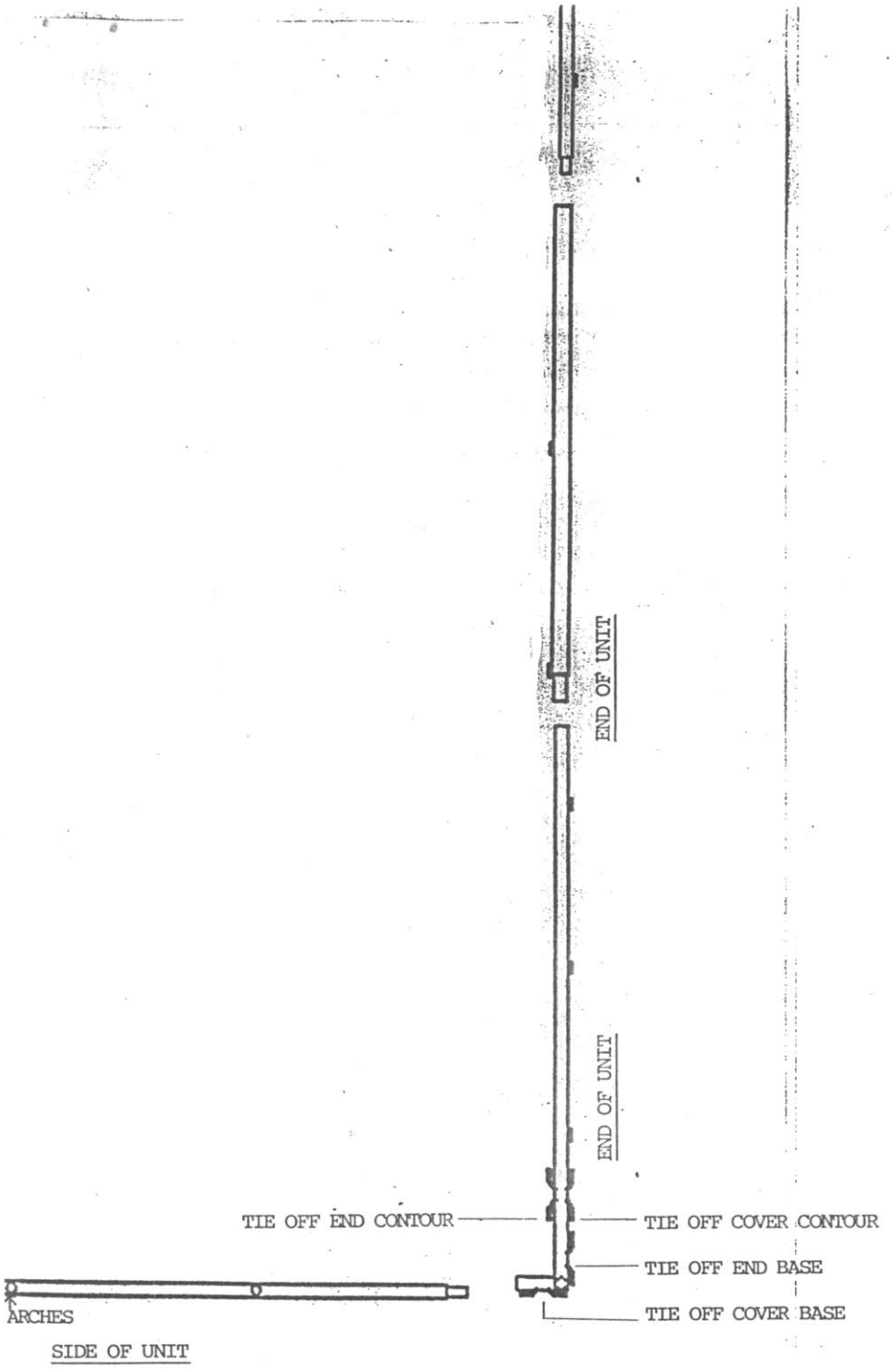

END OF UNIT
END OF UNIT
TIE OFF END CONTOUR
TIE OFF COVER CONTOUR
TIE OFF END BASE
TIE OFF COVER BASE
ARCHES
SIDE OF UNIT

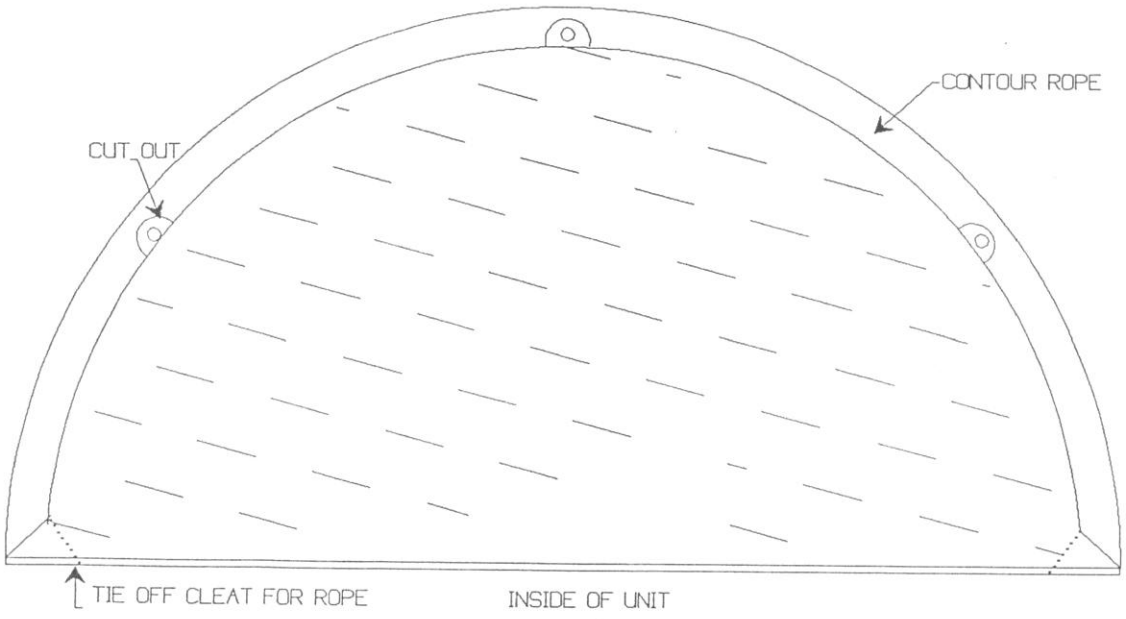
-continued-

Refer to Figure 5.8-2 for steps 6 through 9.

6. Lift the end panel up and over the arch. Reinstall the spacers. Be sure they protrude through the cut outs in the end panel.

7. Work the contour edge of the end panel over the entire arch and tie off one end of the contour rope to the cleat on the inside of the base frame. You may need to pull this rope some but do not pull too much or you will pull it out.
8. Pull the opposite end of the contour rope as tight as you possibly can. Use your foot for leverage. Tie this end of the rope off to the appropriate cleat. Repeat this procedure until you have a nice even fit on the end panel.

9. Install other end panels in a like manner.



12INST13

FIGURE 5.8-2

-continued-

5.10 COVER INSTALLATION

1. Unroll the cover at either side of the unit.The inside of the cover should be facing up. The ground flap must be on the outside of the unit when the cover is installed.

2. Tie the base rope to the cleat near the end of the unit.

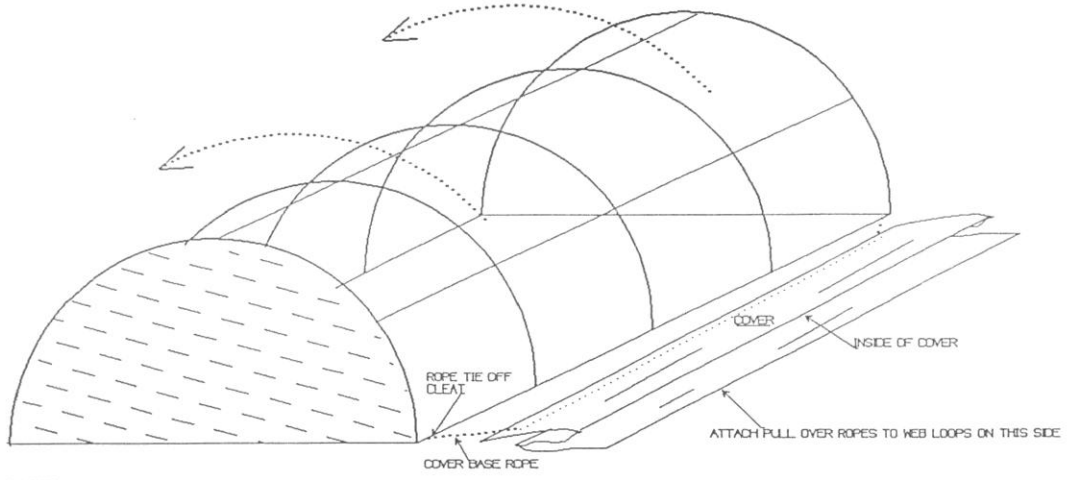
3. Pull the base rope as tight and tie off the other end to the other cleat near the end of the unit.

4. Line up the base cut outs with the hooks on the steel base frame.

5. Pull the cover up and over the frame using pull over ropes. If your unit is 12' wide then you will have pull over ropes. Tie one end of each pull over rope to the web loops on the base edge of the cover. Throw these ropes over the frame and pull the cover up and over. On smaller units that do not have pull over ropes, work the cover up and over the frame.

NOTE
Do not allow the cover to snag on the frame work.

6. Tie off the base rope just like on the other side. Align the cover base cut outs.



17
FIGURE 5.11-1

-continued-

NOTE: IF YOUR UNIT HAS ANY OPENINGS (VENTS, DOORS) IN THE COVER, DO NOT TIGHTEN THE COVER TOO TIGHTLY IN ORDER TO PREVENT EXTRA STRESS FROM FALLING ONTO THE OPENINGS.

-continued-

7. Work the cover over the ends of the unit. You should have about 6" of over hang.

8. Pull the contour ropes tight and tie off to the cleats. Work from end to end of the unit and also from side to side of the unit until the cover is drum tight.

9. Using a hook tool or screw driver, pry the base rope under each of the base hooks around the perimeter of the unit. Figure 5.10-4.

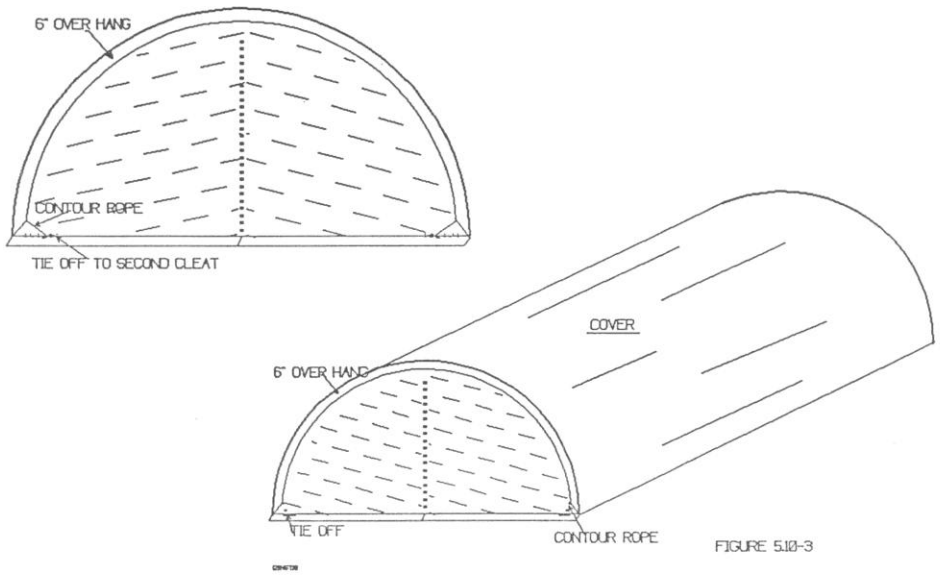


FIGURE 5.10-3

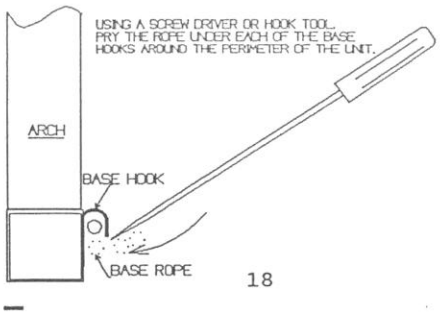


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FIGURE 5.10-4